DRAFT

Updates to Specific Reactivity Values for use with the Predictor Model Staff Report 2006

Updated MIR values:

The spreadsheet below serves as the master list with MIR values used in the 1999 Predictor Model staff report and the updated values from the 2003 ARB staff report on architectural coatings. It has compound (species) name, corresponding CAS # and MIR values adopted in 1998 and 2003. This served as the master list for calculating average specific reactivity values for the different species in the various tests conducted (FTP, Diurnal, etc.).

Oldandnewmirlistforposting.xls

Updated CRC E-65 Permeation Specific Reactivity:

Permeation data was from the CRC E-65 study and the sorted data are provided in the sheet listed below:

Permeationcrce67data.xls

Test were conducted with 10 vehicles for Fuel A (MTBE), Fuel B (EtOH) and Fuel C (Non-Oxygenated). The ID indicated in the sheet refers to Fuel type, R1 indicates Rig 1 where vehicle 1 was tested (Rig 2 is where vehicle 2 was tested and so on). T1 stands for Test 1 conducted on Day 1 (more than 1 test was conducted at times on the same vehicle on Day 1). Calculations were performed by multiplying the mass of a given species with its corresponding MIR and this was performed for all species in a given data set. The product set was then summed and divided by the total mass to arrive at a specific reactivity value for a given data set. An average of all the individual specific reactivity values for all the data sets in a given emissions type (FTP, Diurnal, etc.) was calculated to provide an 'average' for the entire data set for that emissions type.

ARB EtOH Study:

This had three components:

a) FTP exhaust
b) Diurnal 0-48 h test
c) Hotsoak test

For the FTP test, the data file is:

Arbetohftpcomposite.xls

Where the column identifier ID 2F96E1V14T5 is for project 2F96E1 (common to all entries) and V14 is vehicle 14 and T5 is for test number 5. The other identifiers are the

same as described for permeation above. This sheet has combined all the data set into one list for purposes of processing.

For Diurnal 0-48 h test, the file is:

Arbetohdiurnal0-48.xls

Where the identifiers are the same as described above.

For the Hot Soak test, the data file is:

Arbetohhotsoak.xls

With the same identifiers as described earlier.

The data files were used together with the master MIR list to calculate the average specific reactivity values as described for permeation above. The Table below provides both values from the 1999 staff report and the values calculated using the MIR values adopted in 2003 by the ARB. This work has been completed for the ARB EtOH study and the CRC E-67 Permeation study. Values for the other studies will be made available when staff has completed processing data files from the other studies. Questions on this work may be directed to Anil Prabhu, Ph. D. via e-mail at aprabhu@arb.ca.gov or via telephone at 916-327-1501.

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STUDY	AVERAGE SPECIFIC REACTIVITY									
	EXHAUST		EVAPORATIVE							
	1998 MIR	2003 MIR	DIURNAL		HOTSOAK		RUNNING LOSS		PERMEATION	
			1998 MIR	2003 MIR	1998 MIR	2003 MIR	1998 MIR	2003 MIR	1998 MIR	2003 MIR
ARB ATL PHASE 1/PHASE 2	3.35		2.55		2.80		3.61		NM	NM
AUTO OIL PHASE 1	3.21		2.09		2.82		1.61		NM	NM
AUTO OIL PHASE 2	3.68		NM	NM	3.30		NM	NM	NM	NM
ARB EtOH STUDY	3.52	4.30	1.71	1.99	2.51	3.22	NM	NM	NM	NM
CHEVRON STUDY	2.97		1.46		1.96		NM	NM	NM	NM
CRC E-65 (Permeation study)									2.81	3.52

NM: Not Measured